

WHAT IS CLAIMED IS:

5 1. A display comprising: a projector including a light source extending at least one-dimensionally or two-dimensionally, an illumination lens through which a  
10 luminous flux emitted from the light source passes, a light valve for modulating the luminous flux passed through the illumination lens, and a projection lens for projecting the luminous flux modulated at the light valve; and a screen for displaying a projected image projected by the projection lens of the projector, the light valve of the projector being located roughly at a focus point  $f$  of the illumination lens.

15 2. The display according to claim 1, wherein the light source is located roughly at the opposite focus point of the illumination lens from the focus point on which the light valve is located.

20 3. The display according to claim 1, wherein the light valve is positioned at the focus point  $f$  of the illumination lens with a deviation in the range of  $\pm 25\%$  away from the illumination lens.

25 4. The display according to claim 1, wherein in the case where the area of the light source is large, satisfying the relationship of the following expression (7):

$$W > 1.2f/F_n \quad \cdots (7)$$

where  $F_n$  denotes the F-number of the projection lens,  $f$  denotes the focal length of the illumination lens, and  $W$  denotes the diameter of the light source, the light source is positioned at a distance in the range of from zero to 3.5 times the focal length  $f$  of the illumination lens away from the illumination lens.

5. The display according to claim 1, wherein in the case where the area of the light source is small, satisfying the relationship of the following expression (8):

$$W \leq 1.2f/F_n \quad \dots (8)$$

where  $F_n$  denotes the F-number of the projection lens,  $f$  denotes the focal length of the illumination lens, and  $W$  denotes the diameter of the light source, the light source is positioned at a distance of the focal length  $f$  of the illumination lens with a deviation in the range of from -40 % to +80 % away from the illumination lens.

6. The display according to claim 1, wherein the light source comprises light-emitting diodes arranged in a one-dimensional or two-dimensional array.

7. A display comprising the projector according to claim 1, and a screen for causing diffuse reflection of, and performing display of the projected image.

8. The display according to claim 2, wherein the following expression is satisfied:

$$\alpha H \geq \arctan(dH/2f),$$

where dH denotes the horizontal width of the light valve, f denotes the focal length of the illumination lens; and  $\alpha H$  denotes the angle of radiation in the horizontal direction at each point of the light source.

9. The display according to claim 2, wherein the following expression is satisfied:

$$\alpha V \geq \arctan(dV/2f),$$

where dV denotes the vertical width of the light valve, f denotes the focal length of the illumination lens, and  $\alpha V$  denotes the angle of radiation in the vertical direction at each point of the light source.

10. The display according to claim 2, wherein the light source comprises light-emitting diodes arranged in a one-dimensional or two-dimensional array.

11. A display comprising the projector according to claim 2, and a screen for causing diffuse reflection of, and performing display of the projected image.

12. A stereoscopic display comprising: a left and right pair of projectors each including a light source extending at least one-dimensionally or two-dimensionally, an illumination lens through which a

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luminous flux emitted from the light source passes, a  
light valve for modulating the luminous flux passed  
through the illumination lens, and a projection lens  
for projecting the luminous flux modulated at the light  
5 valve; and a screen for displaying respective projected  
images projected by the projection lenses of the pair  
of the projectors on the same panel, the light valve of  
each of the projectors being located roughly at a focus  
point f of the illumination lens.

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13. The display according to claim 12, wherein the  
light valve is positioned at the focus point f of the  
illumination lens with a deviation in the range of  $\pm$   
25 % away from the illumination lens.

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14. The display according to claim 12, wherein in the  
case where the area of the light source is large,  
satisfying the relationship of the following expression  
(7):

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$$W > 1.2f/F_n \quad \cdots (7)$$

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where  $F_n$  denotes the F-number of the projection lens, f  
denotes the focal length of the illumination lens, and  
W denotes the diameter of the light source, the light  
source is positioned at a distance in the range of from  
zero to 3.5 times the focal length f of the  
illumination lens away from the illumination lens.

15. The display according to claim 12, wherein in the

case where the area of the light source is small,  
satisfying the relationship of the following expression  
(8):

$$W \leq 1.2f/F_n \cdots (8)$$

5 where  $F_n$  denotes the F-number of the projection lens,  $f$   
denotes the focal length of the illumination lens, and  
 $W$  denotes the diameter of the light source, the light  
source is positioned at a distance of the focal length  
10  $f$  of the illumination lens with a deviation in the  
range of from -40 % to +80 % away from the illumination  
lens.

16. The display according to claim 12, wherein the  
following expression is satisfied:

15  $\alpha V \geq \arctan(dV/2f),$

where  $dV$  denotes the vertical width of the light valve,  
 $f$  denotes the focal length of the illumination lens,  
and  $\alpha V$  denotes the angle of radiation in the vertical  
direction at each point of the light source.

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17. A display comprising the projectors according to  
claim 12, and a screen for causing diffuse reflection  
of, and performing display of the projected image.

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18. The display according to claim 10, wherein the  
light-emitting diodes constituting the light source are  
arranged at least in two or more different directions  
in combination.

19. A display comprising the projector according to claim 10, and a screen for causing diffuse reflection of, and performing display of the projected image.

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20. A display comprising the projector according to claim 18, and a screen for causing diffuse reflection of, and performing display of the projected image.

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21. The display according to claim 20, wherein the screen comprises a corner reflector, and an anisotropic diffusion mean for causing wider diffusion in a direction parallel to the ridgeline of the corner reflector than in the vertical direction.

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22. The stereoscopic display according to claim 21, comprising a plurality of the projectors.

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